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United States
Department of
Agriculture

Soil
Conservation
Service

Portland,
Oregon



in cooperation with

Oregon
Department of
Water Resources

Water Supply Outlook for Oregon

as of FEBRUARY 1, 1981



TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

COVER PHOTO: SNOW SURVEYORS MAKING SPECIAL MEASUREMENTS OF THE SNOWPACK
NEAR MT. ST. HELENS VOLCANO, WASHINGTON, APRIL 1980.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



☆ GPO 796-768

WATER SUPPLY OUTLOOK FOR OREGON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued

FEBRUARY 1, 1981

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In cooperation with

OREGON
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OF
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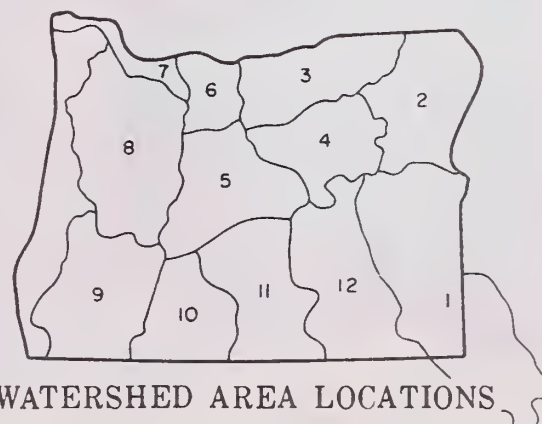
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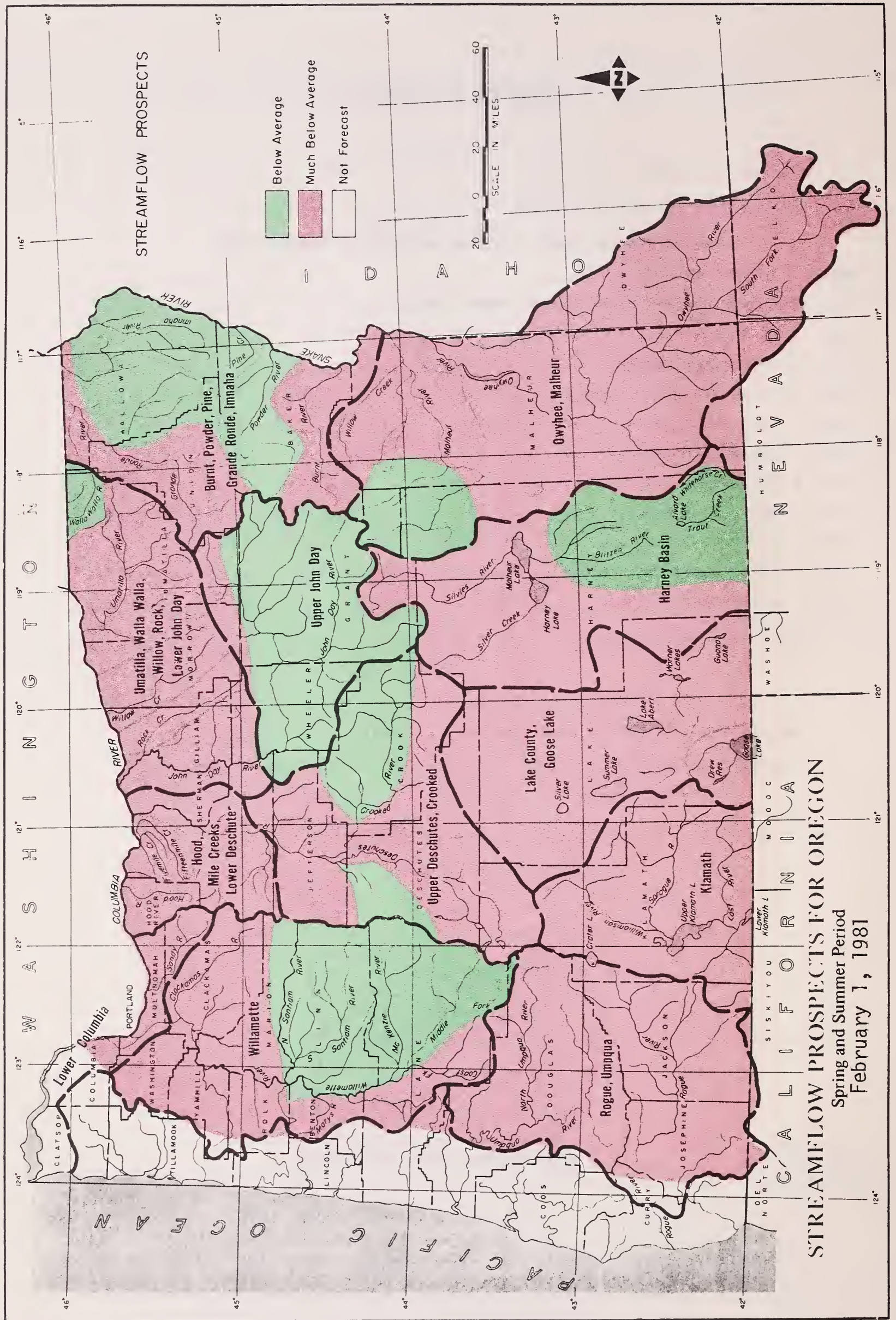
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LIST OF COOPERATORS.....INSIDE BACK COVER



WATERSHED AREA LOCATIONS





Irrigators May Face a Water Shortage This Year

SNOW COURSE MEASUREMENTS MADE ON FEBRUARY 1, 1981, INDICATE THAT LOW FLOWS WILL OCCUR IN MANY STREAMS. STUDY THE ATTACHED WATER SUPPLY FORECAST CAREFULLY FOR STREAM FLOW AND/OR RESERVOIR STORAGE FIGURES THAT CONCERN YOUR AREA. KEEP IN TOUCH WITH YOUR IRRIGATION DISTRICT OR OTHER OFFICIALS FOR ESTIMATES OF THE SUPPLY AVAILABLE TO YOU. YOU MAY FIND YOU'LL NEED TO CHANGE CROPS, REDUCE PLANTED ACREAGE, ADJUST TIMING OF WATER APPLICATION, OR IMPROVE EFFICIENCY OF YOUR WATER DISTRIBUTION SYSTEM.

THESE ARE SOME OF THE EARLY DECISIONS AND PLANS YOU MAY HAVE TO MAKE:

- | | |
|--|--|
| CHANGE CROPS | Plant crops which require less water. |
| REDUCE ACREAGE | Reduce your crop acreage. This will help you make better use of your water as well as reduce the amount of seed and fertilizer you need to buy. Be sure to use cover crops to prevent wind erosion on land you don't irrigate. |
| CONSIDER ENERGY COSTS | Even if you are able to pump supplemental water, you should compare inflated energy costs with anticipated crop earnings. You may be money ahead to reduce acreage or change crops. |
| CHECK IRRIGATION SYSTEM | Check your irrigation systems carefully. Make certain that ditches have no water-wasting weeds or debris to slow delivery, sprinkler heads don't have leaks, pipes have tight connections, and pumps work properly. If new parts or equipment are needed, buy them early. |
| PLANT BEST LAND | Plant only your best land - it makes most efficient use of water. If your soil has been mapped, local Soil Conservation Service (SCS) personnel can guide you. If not, they can still give you general information. |
| TECHNICAL ASSISTANCE? | Maintain close contact with the Soil Conservation Service or your local Conservation District for the latest water supply forecast, and for soil information. SCS has water conservation pamphlets and other information that can help irrigators get by with less water. |
| COST-SHARE OR LOANS? | Maintain close contact with local offices of Agricultural Stabilization and Conservation Service (ASCS) and the Farmers Home Administration (FmHA). If a drought situation develops, funds might be made available for cost-sharing or loans to help you apply special water conservation practices. |
| CROPS, FEED, FERTILIZER, OR MARKETING QUESTIONS? | Contact your local Cooperative Extension Service office for crop selection alternatives, fertilizer recommendations, feed supply conditions, and marketing outlook. |

SCS, ASCS, AND FmHA ARE LISTED IN THE PHONE BOOK UNDER "U.S. GOVERNMENT, AGRICULTURE, DEPARTMENT OF." COOPERATIVE EXTENSION SERVICE IS USUALLY LISTED WITH LOCAL COUNTY OFFICES.

WATER SUPPLY OUTLOOK AND SUMMARY FOR OREGON

FEBRUARY 1, 1981

*
* Water supplies will be much below average for most Oregon water users *
* dependent upon direct diversion this next summer. The prospects are *
* becoming marginal for some areas with access to stored water. The *
* mountain snowpack is extremely poor with new minimum record amounts *
* of snow water measured at 12 locations. Precipitation during January *
* was much below normal over the whole state. *
*

SNOW COVER

Clear skies and a real lack of storm activity during January kept the mountain snowpack at an extremely poor condition. Snow cover ranges from 9% to 35% of average in the Cascades. New minimum record amounts of snow were measured at 12 snow courses. Klamath and Lake Counties and the Blue Mountains near Pendleton have a snowpack 12 to 30% of average. The rest of eastern Oregon is near half of normal for February 1.

PRECIPITATION

Precipitation in Oregon this past month was much below normal. The precipitation that was received fell during the last few days of the month and contributed very little to the mountain snowpack. Percentages of average ranged from 30 to 65% east of the Cascades and 20 to 30% in the western valleys. Precipitation received since the first of November has been 60 to 95% of average for the state.

RESERVOIR STORAGE

Twenty-six major irrigation reservoirs are currently storing 1,809,000 acre feet of water. This is 92% of average and 58% of total useable capacity. Many reservoirs will not fill because of the expected low streamflow this spring and summer. Potential water problems exist for users with access to Gerber, Clear Lake (Wasco), Fish Lake, Fourmile Lake, Crescent Lake and possibly Cold Springs and McKay Reservoirs.

-continued on next page-

STREAMFLOW

Streamflow during January was much below average throughout the state due to the lack of precipitation.

Summer streamflow will be below average because of the extremely poor snowpack.

Forecasts of representative streamflow for Oregon are as follows:

<u>STREAM</u>	<u>PERIOD</u>	<u>FORECAST</u> <u>% of 1963-77 AVG.</u>
Owyhee net Inflow	Feb.-July	58
Malheur nr. Drewsey	Feb.-July	70
Deschutes @ Benham Falls	Apr.-Sept.	65
Grande Ronde @ La Grande	Mar.-Sept.	60
Willamette Mid.Fk. nr. Oakridge	Apr.-Sept.	70
Upper Klamath Lake net Inflow	Apr.-Sept.	63
Rogue @ Raygold	Apr.-Sept.	62
Silvies nr. Burns	Mar.-July	65

These forecasts assume normal precipitation and temperatures will occur from February 1 through June. If unusual weather occurs during this period streamflow will change accordingly.

The forecasts in this bulletin are a result of coordinated activity between the Soil Conservation Service and the National Weather Service as an effort to provide the best possible service to water users.

WATER SUPPLY OUTLOOK

OWYHEE, MALHEUR WATERSHEDS

OREGON

GENERAL OUTLOOK

Adequate water supplies are forecast for only those users with access to stored water supplies. Reservoir storage is close to normal or above for February 1. The snowpack is much below average throughout the county ranging from 40% to 70%. Precipitation for January was 63% of normal. Streamflow is forecast to be much below normal next summer.



STREAMFLOW FORECASTS

STREAMFLOW FORECASTS	THIS YEAR			PAST RECORD	
BASIN, STREAM and/or FORECAST POINT	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Bully Creek at Warmsprings	8.1	64	Mar.-May		12.6 ^b
Malheur near Drewsey	75	70	Feb.-July		107
	51	70	Apr.-Sept.		73
Malheur, North Fork at Beulah	58	71	Feb.-July		82
	47	70	Apr.-Sept.		67
Owyhee Reservoir net Inflow	336	58	Feb.-July	521	578
	235	60	Apr.-Sept.	387	392
Owyhee at Rome	358	60	Feb.-July		596 ^b
Succor Creek near Jordan Valley	8.5	55	Feb.-July		15.4 ^b

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Owyhee near Rome	2000	April 7	May 14
	1000	April 20	May 28
	500	April 28	June 11

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Beulah	60.0	21.3	20.3	27.9
Bully Creek	30.0	14.9	19.7	14.9
Owyhee	715.0	525.3	540.6	485.1
Warm Springs	191.0	137.0	95.4	95.2

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Jordan Creek	1	37	43
Malheur River	4	74	63
Owyhee River	6	43	44
Bully Creek	2	--	71

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS

OREGON

GENERAL OUTLOOK

Normal water supplies are forecast only for users with access to stored water. Reservoir storage is close to normal for February 1. The snowpack is 25 to 60% of average. January precipitation was 60% of normal and added very little to the snowpack. Streamflow is forecast to be 65 to 75% of average next summer.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^C
Anthony Creek blw. North Fork nr. North Powder	12.4	72	Feb.-July	258 221	17.3
Bear near Wallowa	46	70	Apr.-Sept.		65
Big Creek blw. Burn Creek nr. Medical Spring	8.0	65	Feb.-July		12.3
Burnt near Hereford	32	65	Feb.-July		50
	23	65	Apr.-Sept.		36
Catherine near Union	45	70	Apr.-Sept.		64
Deer Creek abv. Phillips Res. nr. Sumpter	11.0	60	Feb.-July		18.3 ^b
Eagle Creek abv. Skull Creek	135	80	Apr.-July		169
	147	80	Apr.-Sept.		184
Grande Ronde at La Grande	119	60	Mar.-Sept.		199
	97	60	Apr.-Sept.		161
Hurricane near Joseph	32	70	Apr.-Sept.		46
Imnaha at Imnaha	244	80	Apr.-Sept.		305
Lostine near Lostine	86	70	Apr.-Sept.		123
Pine Creek nr. Oxbow	190	80	Feb.-July		238 ^b
Powder near Sumpter	43	75	Apr.-July		57
	44	76	Apr.-Sept.		58
Wallowa, East Fork near Joseph	9.6	75	Feb.-Sept.		12.8
	8.6	75	Apr.-Sept.		11.5
Wallowa at Joseph	52	75	May-July		69
Wolf Creek Res. net Inflow	8.6	65	Mar.-June		13.2 ^b

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^C
Phillips Lake	73.5	Late	--	43.7 ^b
Thief Valley	17.4	17.7	14.0 ^a	15.5 ^b
Unity	25.2	19.0	10.5	12.5
Wallowa Lake	37.5	22.7	15.4	21.4
Wolf Creek	10.4	5.4	3.3	--

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^C
Burnt River	4	73	58
Grande Ronde River above La Grande	3	39	26
Powder River	5	69	57
Wallowa, Imnaha, Catherine Creek	7	77	63

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Eagle Cr.abv.Skull Cr.	225	July 10	July 25
	160	July 20	Aug. 5
			Avg.value 49
Catherine Cr.nr.Union	32	Aug. 1	July 9
	100	June 23	July 28
	50	July 14	
Powder near Sumpter	100	June 9	June 25
	20	July 7	July 22
Deer Cr. abv. Phillips Res. nr. Sumpter	40	May 24	June 17
	10	June 13	July 6

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

Area 3

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS OREGON

GENERAL OUTLOOK

Below average water supplies are forecast for Morrow, Umatilla and Gilliam Counties. The mountain snowpack is extremely poor with Lucky Strike recording the least amount of snow since measurements were started in 1939. Precipitation during January was 50% of normal. Reservoir storage is below average and streamflow this summer is forecast to be much below average.

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STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Butter Creek nr. Pine City	7.5	70	Mar.-July		10.7
Couse Creek nr. Milton Freewater	4.7	65	Feb.-July		7.2 ^b
McKay near Pilot Rock	13.2	60	Apr.-Sept.		22
Pine Creek near Weston	4.3	75	Feb.-July		5.7 ^b
Rhea Creek nr. Heppner	5.3	65	Feb.-July		8.1
Rock Creek abv. Cayuse Canyon nr. Condon	12.6	60	Feb.-July		21 ^b
Umatilla near Gibbon	62	63	Mar.-Sept.		99
	49	63	Apr.-Sept.		78
Umatilla at Pendleton	122	60	Mar.-Sept.		204
Walla Walla, South Fork near Milton	71	86	Mar.-Sept.		82
	58	84	Apr.-Sept.		69
Willow Creek at Heppner	5.0	60	Feb.-July		8.4

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Umatilla at Pendleton	550	April 14	May 17
So. Fk. Walla Walla near Milton	200	May 15	June 9
	95	Aug.-Sep.	Avg. value 105

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Cold Springs	50.0	25.0	24.5	28.5
McKay	73.8	28.9	30.7	34.4

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
McKay Creek	3	19	12
Umatilla River	3	42	26
Walla Walla River	2	45	25

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

UPPER JOHN DAY WATERSHEDS

OREGON

GENERAL OUTLOOK

Below normal water supplies are forecast for the John Day basin. The snowpack is 40 to 50% of average and January precipitation was only 44% of average. Streamflow is forecast to be below average next summer.



STREAMFLOW FORECASTS

STREAMFLOW FORECASTS	THIS YEAR			PAST RECORD	
BASIN, STREAM and or FORECAST POINT	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last year	Average C
Camas Creek near Ukiah	28	67	Mar.-July		42
	22	65	Apr.-Sept.		34
John Day, Middle Fork at Ritter	92	69	Mar.-July		133
	78	69	Apr.-Sept.		108
John Day, North Fork at Monument	509	80	Mar.-July		639
	421	78	Apr.-Sept.		541
Mountain Creek nr. Mitchell	2.8	60	Feb.-July		4.6
Strawberry near Prairie City	5.8	79	Mar.-July		7.3
	6.1	79	Apr.-Sept.		7.7

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
John Day at Service Cr.	124	Aug. 1	Avg. value 212

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average C
John Day, North Fork	7	57	43
John Day abv. Dayville	5	64	52

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

UPPER DESCHUTES, CROOKED WATERSHEDS

OREGON

GENERAL OUTLOOK

Below average water supplies are forecast for the Deschutes-Crooked River basins except for most users who have access to stored water. These users should have adequate water. Precipitation during January was 1/2 of normal and contributed very little to the already meager mountain snowpack. The snow cover varies from 20% of average on the Little Deschutes to 46% on the Crooked River. Reservoir storage is very low in Crane Prairie and Crescent Lake. Streamflow should be much below average next summer.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Beaver Creek near Paulina	29	74	Feb.-July		39
	10.1	63	Apr.-Sept.		16.1
Crane Prairie Reservoir total Inflow	82	69	Apr.-Sept.		120
Crescent at Crescent Lake	10	50	March-July		20
	11	50	Apr.-Sept.		22
Crooked River nr. Prineville	113	70	Feb.-July		161
	59	65	Apr.-Sept.		90
Crooked R., No. Fk. blw. Lookout Cr. nr. Paulina	109	75	Feb.-July		14.5 ^b
Deschutes below Bend	Not forecast this month.				
Deschutes at Benham Falls	314	65	Apr.-July		483
	473	65	Apr.-Sept.		728
Deschutes below Snow Creek	54	71	Feb.-Sept.		75
	42	67	Apr.-Sept.		63
Deschutes, Little near La Pine	67	66	Feb.-July		102
	44	60	Apr.-July		74
Ochoco Reservoir net Inflow	17.5	70	Feb.-July		29
	11.2	70	Apr.-Sept.		16
Squaw near Sisters	37	75	Apr.-Sept.		49
Tumalo near Bend	34	75	Apr.-Sept.		45

FORECAST DATE of LOW FLOW VALUES

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value	RESERVOIR	Usable Capacity	Usable Storage		
						This Year	Last Year	Average ^c
Crane Prairie net Inflow	233	Peak		Crane Prairie	55.3	29.4	27.7	44.9
	162	Oct. 31		Crescent Lake	86.9	22.0	27.5	61.4
	Peak	May 15		Ochoco	47.5	29.6	30.6	26.0
Crooked R. near Post	Not forecast this month.			Prineville	153.0	97.9	94.8	101.1
Deschutes at Bend	Will forecast March 1.			Wickiup	200.0	132.5	133.8	156.4
Little Deschutes nr. La Pine.	Will forecast March 1.							
Squaw Cr. nr. Sisters	100	July 19	Aug. 16					
Tumalo Cr. nr. Bend	235	June 7	June 23					
	207	June 9	June 25					
	150	June 17	July 5					
	71	July 1	Aug. 7					

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Crooked, Ochoco	4	57	46
Deschutes abv. Wickiup	3	44	39
Little Deschutes	4	42	22
Tumalo & Squaw Crs.	3	43	36

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

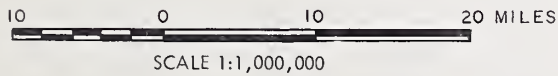
WATER SUPPLY OUTLOOK

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS

OREGON

GENERAL OUTLOOK

The Hood River valley should experience below average water supplies next summer. Most of the snow courses around Mt. Hood recorded new minimum amounts of snow on the first of the month. January was very dry bringing precipitation only 30% of normal. Streamflow, consequently, will be much below average next summer.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD	
	FORECAST		THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average	PERIOD	Last Year Average ^c
Hood River at Tucker Bridge nr. Hood River	157	65	Apr.-July	242
	187	65	Apr.-Sept.	289
Hood River, West Fork near Dee	86	68	Apr.-July	127
	107	72	Apr.-Sept.	149
White below Tygh Valley	64	56	Apr.-July	114
	72	56	Apr.-Sept.	129

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Clear Branch Inflow	*22	July 15-31	**39
*Average cfs forecast to flow for this two-week period.			
**Average cfs for period of record.			
White blw. Tygh Valley	200	June 5	July 3
	110	Aug. 1	Avg. value 145

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Clear Lake (Wasco)	11.9	1.6	1.1	3.9

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Hood River	5	18	16
Mile Creeks	-	-	-
White River	3	17	15

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

LOWER COLUMBIA WATERSHEDS

OREGON

GENERAL OUTLOOK

The streamflow forecast for the Columbia River at the Dalles has been reduced from last month. The summer streamflow is now forecast to be 78 percent of normal. This low streamflow forecast is due to abnormally high January temperatures in British Columbia which melted much of the low and mid-elevation snow. The snow cover in British Columbia which had been very good now ranges from 50 to 85 percent. The snow cover is much below average for the United States portion of the Columbia. The streamflow for the Sandy River is forecasted to be 64 percent of normal. This is due to a 17% of normal snowpack and below normal precipitation. Water users who must divert directly from streams may experience summer shortages especially on the Sandy River.



SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Sandy River	2	17	17

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Columbia at The Dalles	69,400	78	Apr.-July		88,520
	81,200	78	Apr.-Sept.		103,500
Sandy River near Marmot	199	61	Apr.-July		329
	247	64	Apr.-Sept.		384

HISTORICAL DATA (Columbia River at The Dalles)

YEAR	STREAMFLOW ^d (1,000 A.F.)			REGULATED PEAK (1,000 cfs)	DATE
	APR - SEPT.	APR - JUNE	MAY - JUNE		
1963	87,860	58,499	47,812	437	June 18
1964	110,422	73,512	63,670	662	June 18
1965	114,222	80,098	62,467	520	June 9
1966	87,386	58,250	45,962	396	June 12
1967	109,319	74,378	66,452	622	June 10
1968	89,102	55,593	47,994	404	June 13
1969	112,377	85,742	63,899	515	May 15
1970	88,243	62,993	55,227	425	May 28
1971	126,898	91,781	76,453	557	May 13
1972	135,500	97,041	81,451	619	June 20
1973	65,549	43,765	36,565	221	December 5
1974	139,501	99,035	78,946	588	June 20
1975	108,906	73,018	62,861	422	May 17
1976	122,771	79,084	62,554	418	May 14
1977	54,108	35,505	28,394	213	January 25
1963-77 Avg.	103,478	71,220	58,714	468	

LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria)

VANCOUVER GAGE (Weather Bu)	FLOW AT THE DALLES (1,000 cfs)	DRAINAGE DISTRICT PUMPHOUSE						
		SANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
		RIVER MILES						
		118.9	96.0	91.0	77.0	62.0	52.0	47.0
35 (1894)	1210	41.2	34.2	33.3	28.5	21.9	17.5	15.5
34	1160	40.5	33.5	32.5	27.7	21.2	17.0	15.0
33	1100	39.6	32.4	31.4	26.7	20.2	16.1	14.3
32 (1972)	1050	38.9	31.5	30.5	25.7	19.5	15.4	13.7
31 (1948)	1000	38.0	30.7	29.5	25.1	18.8	14.7	13.0
30	943	36.6	29.5	28.5	24.3	18.1	14.0	12.4
29	897	35.5	28.5	27.7	23.7	17.5	13.4	11.8
28	853	34.3	27.5	26.7	22.8	17.0	13.0	11.4
27 (1956)	811	33.0	26.5	25.6	21.8	16.2	12.5	11.0
26 (1950)	771	32.1	25.5	24.6	20.9	15.5	12.2	10.7
25	733	30.7	24.2	23.2	19.7	14.6	11.7	10.3
24	697	29.7	23.0	22.2	19.0	14.1	11.4	10.2
23	662	29.0	22.3	21.4	18.4	13.6	11.2	10.0
22	628	28.1	21.4	20.3	17.2	13.0	10.9	9.7
21	595	27.2	20.7	19.5	16.4	12.6	10.6	9.6
20 (1954)	564	26.2	19.8	18.6	15.5	12.1	10.2	9.4
19	534	25.5	19.2	18.0	15.0	11.8	10.0	9.3
18	501	24.4	18.3	17.2	14.3	11.4	9.8	9.1
17	479	23.4	17.4	16.4	13.7	11.0	9.6	8.9
16	452	22.4	16.5	15.5	13.0	10.5	9.3	8.7



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Clackamas at Estacada	434	65	Apr.-July		667
	508	65	Apr.-Sept.		782
Clackamas above Three Lynx	339	67	Apr.-July		506
	404	67	Apr.-Sept.		603
McKenzie at McKenzie Bridge	316	70	Apr.-July		452
	419	70	Apr.-Sept.		598
McKenzie near Vida	768	75	Apr.-July		1,024
	944	75	Apr.-Sept.		1,259
McKenzie, So. Fork near Rainbow	145	70	Apr.-July		207
	164	70	Apr.-Sept.		234
Mohawk River near Springfield	116	70	Feb.-July		166
Oak Grove Fork above Power Intake	95	72	Apr.-July		132
	121	72	Apr.-Sept.		168
Row near Dorena	78	80	Apr.-July		98
	83	80	Apr.-Sept.		104
Santiam, North at Mehama	526	70	Apr.-July		752
	602	70	Apr.-Sept.		860
Santiam, South at Waterloo	383	70	Apr.-July		547
	413	70	Apr.-Sept.		590
Scoggins Creek nr. Gaston	31	70	Feb.-July		44
Thomas Creek near Scio	109	68	Feb.-July		160
Willamette, Coast Fork nr. London	17.6	65	Apr.-July		27
Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	473	70	Apr.-July	559	678
	543	70	Apr.-Sept.	625	776
Willamette, No. Fk. of Mid. Fk. near Oakridge	128	68	Apr.-July		188
	142	68	Apr.-Sept.		209
Willamette at Salem	3,245	73	Apr.-Sept.		4,445

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Clackamas River	1	13	8
McKenzie River	3	44	17
Row River	2	43	9
Santiam River	4	30	11
Willamette, Mid. Fk.	4	48	22

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Blue River	85.6*	5.6	3.2	15.1 ^b
Cottage Grove	30.0*	2.6	1.0	3.1
Cougar	155.2*	5.4	21.8	26.1
Detroit	299.9*	22.2	16.3	59.2
Dorena	70.5*	5.2	3.2	13.6
Fall Creek	115.0*	5.7	10.8	15.0 ^b
Fern Ridge	94.2*	15.9	7.5	22.9
Foster	30.0*	0.8	2.3	1.2 ^b
Green Peter	270.0*	23.7	12.0	51.4 ^b
Hills Creek	200.0*	12.3	47.0	34.7
Lookout Point	337.2*	7.6	10.8	59.7
Timothy Lake	61.7	48.6	34.5	53.7
Henry Hagg Lake	53.0	34.9	37.1	--
*Multiple purpose reservoir--space reserved primarily for flood runoff.				

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK

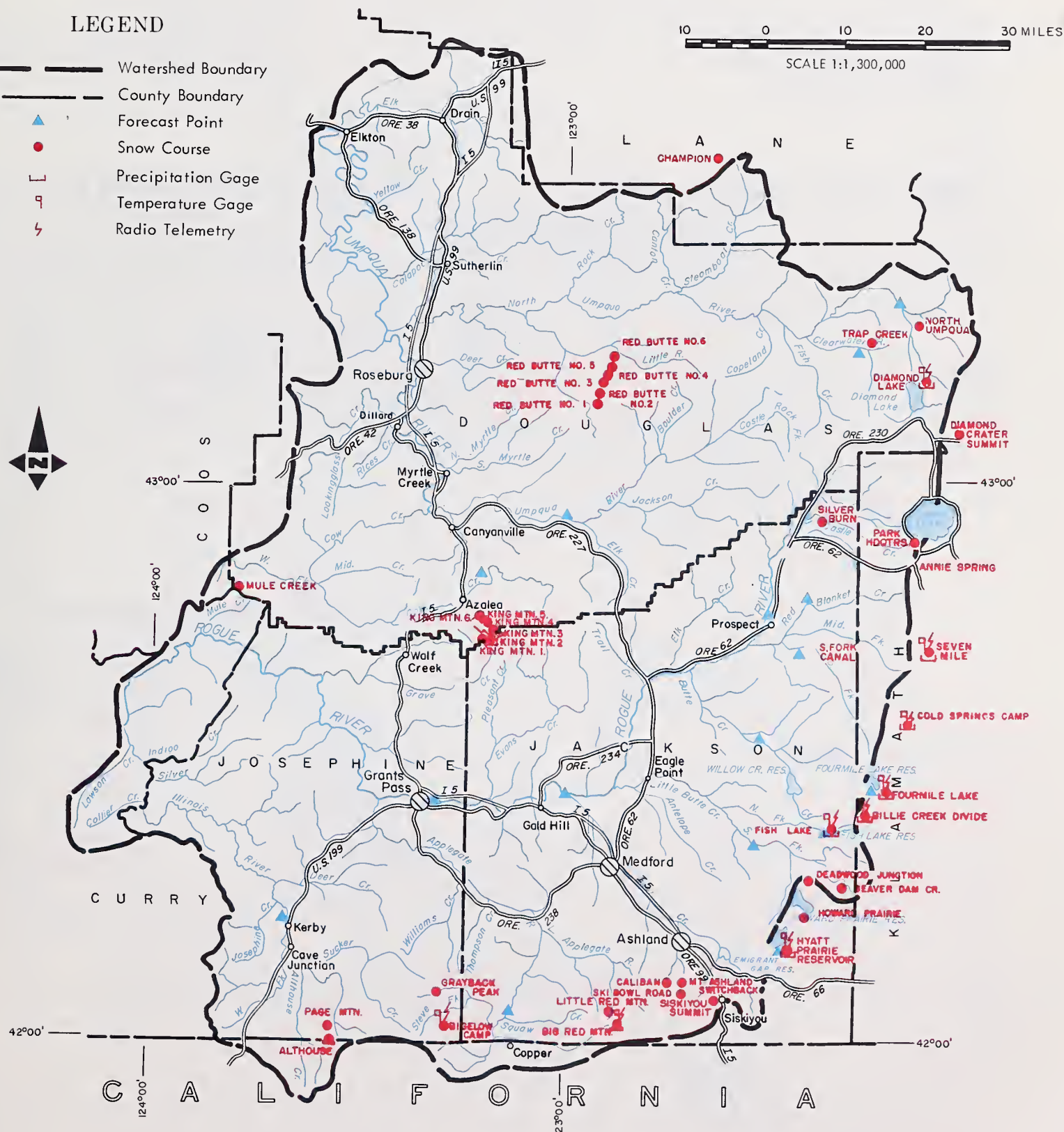
ROGUE, UMPQUA, WATERSHEDS

OREGON

Area 9

GENERAL OUTLOOK

Water shortages will probably occur for most water users next summer in the Rogue and Umpqua basins. The mountain snowpack is extremely poor. Diamond Lake snow course recorded the least amount of snow since measurements began in 1937. January was very dry recording only 24% of average precipitation. Streamflow is forecast to be much below normal. Talent Irrigation District should have adequate supplies because of adequate water stored in their reservoirs.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Applegate near Copper	65	50	Apr.-Sept.		129
Clearwater above Trap Creek	53	75	Apr.-Sept.		71
Cow Creek nr. Azalea	22	50	Feb.-July		43
Fourmile Lake net Inflow	2.0	50	Apr.-Sept.		3.9
Grave Creek at Pease Bridge nr. Placer	11.6	55	Feb.-July		21
Hyatt Reservoir net Inflow	2.4	48	Apr.-July		4.9
Illinois River near Kerby	106	60	Apr.-July		176
	110	60	Apr.-Sept.		183
Little Butte, N.Fk. at Fish Lake nr. Lake Cr.	8.9	64	Apr.-Sept.		14.0
Little Butte, S.Fk. near Lake Creek	22	65	Apr.-Sept.		34
Red Blanket Creek nr. Prospect	24	68	Apr.-July		35
Rogue above Prospect	167	65	Apr.-July		257
Rogue, South Fork near Prospect	40	64	Apr.-July		62
	47	64	Apr.-Sept.		74
Rogue at Raygold near Central Point	469	62	Apr.-July	594	756
	570	62	Apr.-Sept.	728	919
Rogue at Grants Pass	455	60	Apr.-July		759
	545	60	Apr.-Sept.		908
Sucker Cr. blw. Little Grayback nr. Holland	29	50	Apr.-July		58
Umpqua, No. blw. Lemolo Lake, nr. Toketee Falls	120	71	Apr.-Sept.		170
Umpqua, So. near Brockway	216	57	Apr.-July		380
Umpqua, So. at Tiller	109	60	Apr.-July		183
So. Fk. Big Butte Cr.	25	68	Apr.-July		37

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Cow Creek nr. Azalea	20	June 10	July 4
	10	July 15	Aug. 19
Little Butte Creek, South Fork	100	April 14	May 15
South Umpqua nr. Brockway	90	July 1	July 30
South Umpqua at Tiller	140	June 15	July 10
	90	July 5	July 30
	60	Aug. 2	Aug. 27

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Emigrant Lake	39.0	24.4	26.2	24.4
Fish Lake	8.0	4.0	5.1	5.9
Fourmile Lake	16.1	4.6	7.0	9.9b
Howard Prairie	60.0	42.2	54.0	44.5
Hyatt Prairie	16.1	10.8	12.8	11.8
Lost Creek	315.0	158.5	168.5	--

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

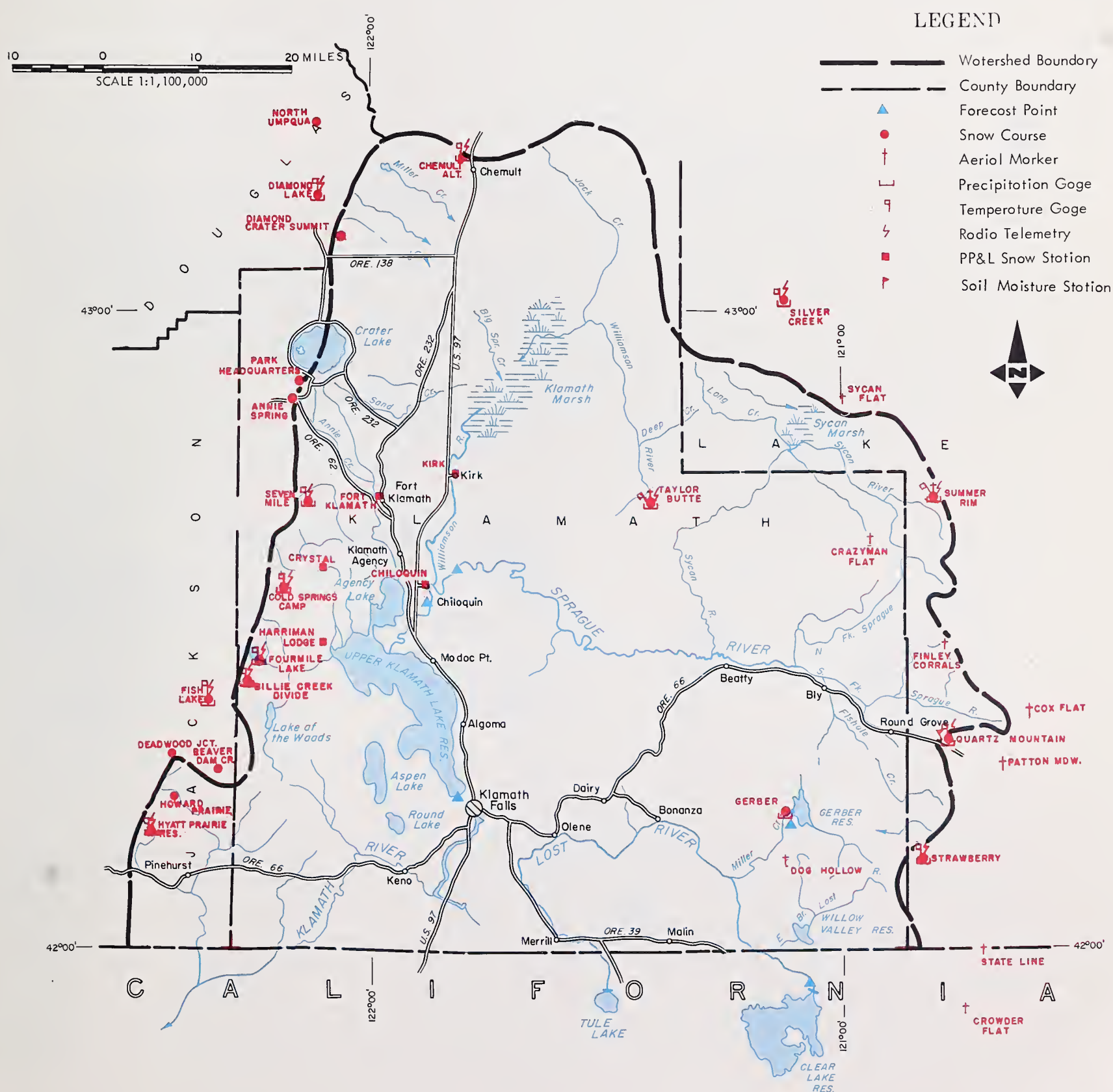
RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Applegate	2	42	27
Bear Creek	2	55	37
Butte Creek	4	51	22
Illinois River	3	51	17
North Umpqua	3	28	9
Rogue River	4	43	23
Mt. Ashland	4	46	21

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

GENERAL OUTLOOK

Below to much below normal water supplies are forecast for Klamath County. The mountain snowpack is extremely poor ranging from 10 to 30% of average. January was very dry, recording 37% of normal precipitation. Reservoir storage is below average and streamflows next summer will be much below average.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Clear Lake Reservoir Inflow	51	55	Feb.-July		92
Gerber Reservoir Inflow	21	52	Feb.-July		41
Sprague near Chiloquin	182	53	Feb.-Sept.		344
	128	53	Apr.-Sept.		242
Upper Klamath Lake net Inflow	552	63	Feb.-Sept.	676	877
	331	63	Apr.-Sept.	361	526
Williamson below Sprague River	356	60	Feb.-Sept.		594
	245	60	Apr.-Sept.		409

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Clear Lake	440.2	151.4	150.2	235.2
Gerber	94.0	28.2	34.6	50.6
Upper Klamath Lake	584.0	356.9	390.8	372.6

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Lost River	4	32	27
Sprague River	3	32	30
Upper Klamath	6	32	20
Williamson River	3	29	13

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Chewaucan near Paisley	53	60	Mar.-July	82	88
Cottonwood Creek nr. Lakeview	5.8	50	Mar.-July		11.6
Deep above Adel	52	65	Mar.-July		80
Drews Reservoir net Inflow	16.4	40	Mar.-July		41
Honey Creek near Plush	14.7	70	Mar.-July		21
Silver Creek near Silver Lake	7.8	55	Apr.-July		14.1
Twentymile near Adel	18.2	70	Mar.-July		26
Bridge Cr. nr. Spahr Ranch nr. Silver Lake	1.7	50	Apr.-July		3.4

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Deep Cr. above Adel	100	June 1	June 21
Honey Cr. nr. Plush	100	April 25	May 15
	50	May 5	May 30
Twentymile near Adel	50	May 15	June 2
	10	June 15	July 3

RESERVOIR STORAGE (Thousand Ac. Ft.) END OF MONTH

RESERVOIR	Usable Capacity	Usable Storage		
		This Year	Last Year	Average ^c
Cottonwood	8.7	2.1	--	2.8 ^b
Drews	63.0	30.5	33.4	39.3
Thompson Valley	19.5	3.5	4.4	14.0 ^b

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Chewaucan River	3	32	30
Deep Creek	3	29	36
Drew Creek	3	26	23
Honey Creek	3	50	65
Silver Creek	3	40	15
Twentymile Creek	2	53	75

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

Harney County water users will have below to much below average water supplies next summer. The snowpack is 1/2 of normal on the Silvies basin and 70% of average in the Steens. January precipitation was 56% of normal and added very little to the mountain snowpack. The Trout Creek mountains have the best conditions in the county with the new snow course, Government Corrals, recording 28" of snow and 6.0" of water equivalent.



STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average ^c
Donner und Blitzen near Frenchglen	44	75	Mar.-July		59
	43	75	Apr.-Sept.		57
Silver near Riley	10.3	65	Apr.-July		15.8
Silvies River near Burns	62	65	Mar.-July		96
	50	65	Apr.-Sept.		77
Trout Creek near Denio	7.4	80	Mar.-July		9.3

FORECAST DATE of LOW FLOW VALUES

FORECAST POINT	Low Flow Value Second/Ft.	Forecast Date Stream Will Recede to Low Flow Value	Average Date of Low Flow Value
Silvies nr. Burns	400	April 7	May 5
	200	April 20	May 21
	100	May 5	June 9
	50	May 20	June 23
Donner und Blitzen	200	June 1	June 15
	100	June 15	July 5
=====			
	<u>GAGE HEIGHT</u>	<u>SURFACE ACRES</u>	<u>AVG. SURFACE ACRES</u>
Malheur Lake at Break in Cole Island Dike near Voltage			
-July 1	92.95	34,300	40,000
-Aug. 1	92.40	26,900	33,000

SUMMARY of SNOW MEASUREMENTS

(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF	
		Last Year	Average ^c
Donner und Blitzen R.	2	-	68
Silver Creek	2	88	51
Silvies River	4	59	50
Trout Creek	-	-	-

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 1

FEBRUARY 1, 1981

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c
OWYHEE, MALHEUR WATERSHEDS					
Antelope Ridge (Ida.)		<i>e</i>			
Battle Creek (Ida.) *	2/2	TR	0.1	--	2.8
Bear Creek (Nev.)	2/3	25	5.3	14.0	13.8 <i>b</i>
Big Bend (Nev.)	1/28	11	2.2	6.0	6.1
Blue Mountain Springs	1/29	26	7.8	10.6	12.1
Blue Mtn. Spgs. Plw.(T)	1/29	--	6.2	10.1	--
Blue Mtn. Spgs. Plw.(S)	1/29	28	7.0	10.0	11.8 <i>b</i>
Blue Mtn. Spgs. Plw.(M)	1/29	--	3.9	9.7	9.0 <i>b</i>
Boulder Creek *	N/R				
Buck Pasture *	2/2	4	0.8	0.0	1.4
Buckskin, Lower (Nev.)	2/3	9	1.9	--	--
Buckskin, Upper (Nev.)	2/3	12	2.5	--	--
Bull Basin (Ida.) *	2/2	3	0.4	0.0	1.3
Bully Creek *	2/2	9	1.8	--	2.0 <i>b</i>
Call Meadows *	2/2	9	1.8	1.0	2.5 <i>b</i>
Columbia Basin (Nev.)	2/3	9	1.8	5.4	6.8 <i>b</i>
Disaster Peak (Nev.)	2/3	15	3.0	--	--
Eldorado Pass	1/29	13	2.3	2.5	3.2
Fawn Creek (Nev.)		<i>e</i>			
Fish Creek *	2/2	38	9.6	18.9	16.3 <i>b</i>
Fish Creek	1/30	42	10.6	--	--
Fish Creek Pillow(T)	N/R			20.0	--
Fish Creek Pillow(S)	1/30	46	12.0	--	--
Fish Creek Pillow(M)	1/30	--	9.1	--	--
Flag Prairie *	2/2	12	2.4	3.5	3.9
Fox Creek (Nev.)		<i>e</i>			
Fry Canyon (Nev.)	2/2	14	3.6	5.9	5.2
Gold Creek (Nev.)	1/28	5	0.6	4.0	4.0
Gov't. Corrals	1/29	28	6.0	--	--
Granite Peak (Nev.)	2/3	35	7.4	---	10.4 <i>b</i>
Hyde Pasture (Ida.) *	N/R			5.6	4.3
Jack Creek, Lower (Nev.)		<i>e</i>			
Jack Creek, Upper (Nev.)	N/R			6.1	4.2
Jack Peak (Nev.)	N/R			14.7	--
Lake Creek R.S.	1/29	20	4.8	6.4	7.6
Lake Creek R.S. Plw.(T)	1/29	--	4.7	--	--
Lake Creek R.S. Plw.(S)	1/29	22	4.8	7.0	--
Lake Creek R.S. Plw.(M)	1/29	--	4.1	6.5	--
Laurel Draw (Nev.)	N/R			6.8	6.2 <i>b</i>
Logan Valley *	DISCONTINUED				
Lookout Butte *	2/2	TR	0.1	0.1	0.2
Louse Canyon *	2/2	16	3.2	3.4	3.3
Martin Creek (Nev.)	2/3	17	3.6	--	7.2 <i>b</i>
Merritt Mountain (Nev.) *	2/3	24	5.0	3.4	4.4 <i>b</i>
Midas (Nev.) *	2/3	12	2.4	0.1	2.3 <i>b</i>
Mud Flat (Ida.)		<i>e</i>			
Oregon Canyon *	N/R			5.6	3.7
Quinn Ridge (Nev.) *	2/2	3	0.4	0.1	1.5
Red Canyon (Ida.) *	2/2	6	1.2	6.4	5.8
Rock Springs	1/28	9	2.4	3.8	4.4
Rock Spgs. Plw.(T)	N/R				
Rock Spgs. Plw.(S)	1/28	11	2.2	3.0	--
Rock Spgs. Plw.(M)	1/28	--	1.0	1.1	--
Rodeo Flat (Nev.)	2/2	12	2.9	4.3	4.1
76 Creek (Nev.) *	1/31	14	2.6 <i>a</i>	8.8	7.8
Silver City (Ida.)		<i>e</i>			
Silver City (Ida.) *	2/2	6	1.2	4.2	9.8 <i>b</i>
Silvies *	N/R			--	5.8 <i>b</i>
Silvies	1/30	20	4.9	--	--
Silvies Pillow (T)	2/1	--	4.5	10.7	--
Silvies Pillow (S)	N/R				
Silvies Pillow (M)	1/30	--	4.3	--	--
South Mountain #2 (Ida.)	1/31	17	4.0	10.8	9.9
South Mtn. #2 Plw.(T)	1/31	--	4.2	11.8	--
Stag Mountain (Nev.) *	2/3	10	2.1	3.4	3.7 <i>b</i>
Stinking Water	2/2	6	3.2	3.7	2.1
Succor Creek (Ida.) *	2/2	14	2.8	--	3.8
Taylor Canyon (Nev.)	2/2	7	0.9	2.3	4.0
Toe Jam (Nev.) *	2/3	9	1.1	6.5	7.2 <i>b</i>
Tremewan Ranch (Nev.) *	2/2	3	0.5	0.8	1.2
Trout Creek *	2/2	20	4.2	7.8	4.5
"V" Lake *	2/2	27	6.8	8.4	4.0
Vaught Ranch (Ida.) *	2/2	TR	0.1	--	3.2 <i>b</i>
War Eagle (Ida.) *	2/2	35	8.8	22.1	16.3 <i>b</i>

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS					
Aneroid Lake #2	2/4	55	15.6		
Aneroid Lake #2 Plw.(T)	N/R				
Aneroid Lake #2 Plw.(S)	2/4	58	16.2		
Aneroid Lake #2 Plw.(M)	N/R				
Anthony Lake	1/29	29	7.9	15.1	18.2
Bald Mountain (OR) *	2/1	24	7.2	14.8	16.1
Beaver Reservoir (Rev.)	1/29	16	4.0	6.0	9.1
Beaver Res. Pillow (T)	N/R				
Beaver Res. Pillow (S)	1/28	7	1.0	4.8	--
Beaver Res. Pillow (M)	N/R				
Big Sheep *	2/1	60	18.0	19.4	19.7
Blue Mtn. Summit	1/30	25	5.2	5.3	6.9
Bourne	1/30	28	6.5	9.5	11.6
Bourne Pillow (T)	1/30	--	8.5	11.1	--
Bourne Pillow (S)	1/30	31	6.9	11.2	--
Bourne Pillow (M)	1/30	--	7.8	10.3	--
County Line	1/29	--	0.6	2.8	3.9
County Line (Rev.)	1/29	3	0.2	1.5	3.6
County Line Pillow (T)	1/29	--	0.5	--	--
County Line Pillow (S)	1/29	3	0.6	1.8	--
County Line Pillow (M)	1/29	--	0.1	--	--
Dooley Mountain	1/28	14	4.1	5.8	6.4
Eilertson Meadows	1/30	17	2.7	7.9	8.7
Eilertson Mdw. Plw.(T)	1/30	--	1.9	--	--
Eilertson Mdw. Plw.(S)	1/30	16	1.8	6.9	--
Eilertson Mdw. Plw.(M)	1/30	--	1.6	4.2	--
Eldorado Pass	1/30	13	2.3	2.5	3.2
Gold Center	1/30	18	3.9	7.1	9.7
Gold Center Pillow (T)	1/30	--	2.6	--	--
Gold Center Pillow (S)	1/30	13	2.0	6.4	--
Gold Center Pillow (M)	1/30	--	2.5	5.2	--
Goodrich Lake	1/30	45	13.0	25.3	27.2 ^b
Little Alps	1/29	15	3.6	7.1	9.2
Little Antone	DISCONTINUED				
Little Antone (Alt.)	1/29	19	3.8	6.0	--
Lucky Strike	1/29	8	1.0	5.1	8.6 ^b
Lucky Strike Pillow (T)	1/29	--	1.7	3.9	--
Lucky Strike Pillow (S)	1/29	10	1.2	3.0	--
Lucky Strike Pillow (M)	1/29	--	0.0	2.9	--
Meacham	DISCONTINUED				
Mirror Lake *	2/1	95	30.4	46.8	47.4 ^b
Moss Spring	2/1	21	5.2	11.8	15.8
Moss Spring Pillow (T)	2/1	--	5.9	--	--
Moss Spring Pillow (S)	2/1	30	7.2	13.5	--
Moss Spring Pillow (M)	2/1	--	5.2	16.2	--
Mt. Howard Pillow (T)	N/R				
Mt. Howard Pillow (S)	2/1	29	9.5	9.0	--
Mt. Howard Pillow (M)	N/R				
Schneider Meadow	2/1	49	13.8	19.2	21.8
Schneider Meadow Plw.(T)	N/R				
Schneider Meadow Plw.(S)	2/1	49	13.8	19.0	--
Schneider Meadow Plw.(M)	N/R			13.8	--
Schoolmarm	DISCONTINUED				
Standley *	2/1	59	17.7	17.1	19.8 ^b
Taylor Green	2/1	22	6.8	8.8	12.5 ^b
Taylor Green Pillow (T)	2/1	--	7.9	12.7	--
Taylor Green Pillow (S)	2/1	32	9.8	11.8	--
Taylor Green Pillow (M)	2/1	--	7.7	11.9	--
Tipton	1/30	21	4.6	6.5	8.4
Tipton Pillow (T)	1/30	--	3.7	7.7	--
Tipton Pillow (S)	1/30	26	5.5	7.9	10.8 ^b
Tipton Pillow (M)	1/30	--	3.1	4.8	--
Tollgate	DISCONTINUED				
TV Ridge *	2/1	12	3.0	9.4	12.8 ^b
West Eagle Meadows *	2/1	48	14.4	16.8	--
Wolf Creek Pillow (T)	1/30	--	8.1	9.6	--
Wolf Creek Pillow (S)	1/30	37	7.0	11.1	--
Wolf Creek Pillow (M)	1/30	--	8.6	8.3	--

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 1

FEBRUARY 1, 1981

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS					
Arbuckle Mountain	1/29	13	2.1	6.3	7.3
Arbuckle Mtn. Plw. (T)	N/R				
Arbuckle Mtn. Plw. (S)	1/29	25	5.8	11.4	--
Arbuckle Mtn. Plw. (M)	1/29	--	7.4	13.1	14.7 ^b
Blue Mountain Camp	1/29	7	1.1	5.2	12.1
Bowman Springs Plw. (T)	1/29	--	0.9	5.8	--
Bowman Springs Plw. (S)	1/29	6	0.6	4.8	--
Bowman Springs Plw. (M)	1/29	--	0.0	4.5	--
Butte Creek Summit	2/3	7	1.0	--	--
Emigrant Springs	1/29	3	0.5	1.7	4.2
Emigrant Springs Plw. (T)	N/R				
Emigrant Springs Plw. (S)	1/29	2	0.4	2.5	--
Emigrant Springs Plw. (M)	1/29	--	0.4	1.1	--
High Ridge Pillow (T)	1/28	--	5.6	14.1	--
High Ridge Pillow (S)	1/28	26	7.5	13.8	22.6
High Ridge Pillow (M)	1/28	--	6.0	13.6	--
Lucky Strike	1/29	8	1.0	5.1	8.6 ^b
Lucky Strike Plw. (T)	1/29	--	1.7	3.9	--
Lucky Strike Plw. (S)	1/29	10	1.2	3.0	--
Lucky Strike Plw. (M)	1/29	--	0.0	2.9	--
Madison Butte Pillow (T)	2/1	--	1.7	--	--
Madison Butte Pillow (S)	1/29	8	1.2	3.1	--
Madison Butte Pillow (M)	1/29	--	1.2	1.7	--
Meacham	DISCONTINUED				
Tollgate	DISCONTINUED				
UPPER JOHN DAY WATERSHEDS					
Anthony Lake	1/29	29	7.9	15.1	18.2
Arbuckle Mountain	1/29	13	2.1	6.3	7.3
Arbuckle Mtn. Plw. (T)	N/R				
Arbuckle Mtn. Plw. (S)	1/29	25	5.8	11.4	--
Arbuckle Mtn. Plw. (M)	1/29	--	7.4	13.1	14.7 ^b
Blue Mountain Springs	1/29	26	7.8	10.6	12.1
Blue Mtn. Spgs. Plw. (T)	1/29	--	6.2	10.1	--
Blue Mtn. Spgs. Plw. (S)	1/29	28	7.0	10.0	11.8 ^b
Blue Mtn. Spgs. Plw. (M)	1/29	--	3.9	9.7	9.0 ^b
Blue Mountain Summit	1/30	25	5.2	5.3	6.9
Butte Creek Summit	2/3	7	1.0	--	--
Derr	1/30	18	2.5	6.5	7.1
Derr Pillow (T)	N/R				
Derr Pillow (S)	1/30	32	6.5	10.5	--
Derr Pillow (M)	1/30	--	4.4	9.6	--
Gold Center	1/30	18	3.9	7.1	9.7
Gold Center Plw. (T)	1/30	--	2.6	--	--
Gold Center Plw. (S)	1/30	13	2.0	6.4	--
Gold Center Plw. (M)	1/30	--	2.5	5.2	--
Izee Summit	1/28	11	1.8	4.6	5.7
Lucky Strike	1/29	8	1.0	5.1	8.6 ^b
Lucky Strike Plw. (T)	1/29	--	1.7	3.9	--
Lucky Strike Plw. (S)	1/29	10	1.2	3.0	--
Lucky Strike Plw. (M)	1/29	--	0.0	2.9	--
Marks Creek	1/30	15	1.6	0.4 ^a	2.8
Ochoco Meadows	1/30	19	4.0	7.0	6.7
Ochoco Mdws. Plw. (T)	N/R				
Ochoco Mdws. Plw. (S)	1/30	22	5.0	8.5	--
Ochoco Mdws. Plw. (M)	N/R			7.0	--
Olive Lake *	DISCONTINUED				
Schoolmarm	DISCONTINUED				
Snow Mountain	2/2	25	5.3	8.7	9.5 ^b
Snow Mtn. Plw. (T)	2/2	--	2.6	6.0	--
Snow Mtn. Plw. (S)	2/2	19	3.7	5.5	8.6 ^b
Snow Mtn. Plw. (M)	N/R			4.6	--
Starr Ridge	1/28	5	1.4	2.8	4.6
Starr Ridge Plw. (T)	2/1	--	1.5	--	--
Starr Ridge Plw. (S)	1/28	7	1.2	4.0	--
Starr Ridge Plw. (M)	1/28	--	1.4	3.7	--
Tipton	1/30	21	4.6	6.5	8.4
Tipton Pillow (T)	1/30	--	3.7	7.7	--
Tipton Pillow (S)	1/30	26	5.5	7.9	10.8 ^b
Tipton Pillow (M)	1/30	--	3.1	4.8	--

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c
UPPER DESCHUTES, CROOKED WATERSHEDS					
Bald Peter	1/30	28	7.0	18.0	20.2 ^b
Caldwell Ranch	1/30	10	1.6	4.9	8.0 ^b
Cascade Summit	1/29	20	3.5	9.2	20.8
Cascade Summit Plw. (T)	1/29	--	6.8	--	--
Cascade Summit Plw. (S)	1/29	31	6.9	12.3	--
Cascade Summit Plw. (M)	1/29	--	6.6	8.6	--
Chemult Alternate	2/2	11	2.1	4.1	9.8
Chemult Alt. Plw. (T)	N/R				
Chemult Alt. Plw. (S)	2/2	10	2.0	4.0	--
Chemult Alt. Plw. (M)	2/2	--	1.5	--	--
Derr	1/30	18	2.5	6.5	7.1
Derr Pillow (T)	N/R				
Derr Pillow (S)	1/30	32	6.5	10.5	--
Derr Pillow (M)	1/30	--	4.4	9.6	--
Hogg Pass	1/28	25	4.8	12.1	28.4
Hogg Pass Pillow (T)	1/28	--	5.9	13.9	--
Hogg Pass Pillow (S)	1/28	29	6.2	14.4	--
Hogg Pass Pillow (M)	1/28	--	6.2	14.6	--
Hungry Flat	2/3	8	2.0	0.0	4.4
Irish-Taylor Pillow (T)	1/30	--	9.6	20.6	--
Irish-Taylor Pillow (S)	1/30	40	10.9	18.8	28.1 ^b
Irish-Taylor Pillow (M)	1/30	--	9.2	19.9	--
Lionshead*	2/2	12	1.7	11.2	--
Marks Creek	1/30	15	1.6	0.4 ^a	2.8
New Crescent Lake	1/29	13	1.2	5.6	10.4
New Crescent Lake Plw. (T)	1/29	--	0.8	--	--
New Crescent Lake Plw. (S)	1/29	12	1.0	5.5	--
New Crescent Lake Plw. (M)	1/29	--	0.2	3.6	--
New Dutchman Flat #2	2/3	42	15.8	34.1	35.4
Ochoco Meadows	1/30	19	4.0	7.0	6.8
Ochoco Mdws. Plw. (T)	N/R				
Ochoco Mdws. Plw. (S)	1/30	22	5.0	8.5	--
Ochoco Mdws. Plw. (M)	N/R			7.0	--
Racing Creek	1/30	14	2.0	4.8	7.7 ^b
Snow Mountain	2/2	25	5.3	8.7	9.5 ^b
Snow Mountain Plw. (T)	2/2	--	2.6	6.0	--
Snow Mountain Plw. (S)	2/2	19	3.7	5.5	8.6 ^b
Snow Mountain Plw. (M)	N/R			4.6	--
Summit Lake Pillow (T)	N/R				
Summit Lake Pillow (S)	1/29	36	8.9	18.0	27.9 ^b
Summit Lake Pillow (M)	1/29	--	7.3	16.9	--
Tamarack	1/29	7	1.2	2.8	4.2
Tangent	2/3	22	6.2	15.0	17.2
Three Creek Butte	1/28	10	1.0	3.2	8.4
Three Creek Meadow	1/28	13	1.3	5.4	12.8
Three Creek Mdw. Plw. (T)	N/R				
Three Creek Mdw. Plw. (S)	1/28	17	2.3	10.6	--
Three Creek Mdw. Plw. (M)	1/28	--	1.9	7.4	--
Waldo Lake	DISCONTINUED				
Whitewater Meadow *	2/2	6	0.8	1.7	--

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 1

FEBRUARY 1, 1981

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. C

HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS					
Brooks Meadow		e			
Clear Lake	1/29	7	0.6	4.4	7.7
Clear Lake Pillow (T)	N/R				
Clear Lake Pillow (S)	1/29	13	1.8	7.6	--
Clear Lake Pillow (M)	1/29	--	1.8	--	--
Clear Lake Expt.	1/29	12	1.6	7.6	11.7
Greenpoint	1/29	13	2.8	12.5	12.4
Greenpoint Pillow (T)	N/R			13.1	--
Greenpoint Pillow (S)	1/29	15	2.0	14.2	--
Greenpoint Pillow (M)	1/29	--	2.7	11.3	--
Mt. Hood Test Site (T)	1/30	--	9.9	--	43.3 b
Mt. Hood Test Site (S)	1/30	29	7.5	39.3	37.3 b
Mt. Hood Test Site (M)	N/R			40.9	--
Mud Ridge Pillow (T)	1/29	--	1.6	16.2	--
Mud Ridge Pillow (S)	1/29	16	1.5	16.2	21.8
Mud Ridge Pillow (M)	1/29	--	1.8	14.4	--
Red Hill	1/29	18	3.8	21.5	26.6
Red Hill Pillow (T)	1/29	--	3.7	30.8	--
Red Hill Pillow (S)	1/29	22	4.1	21.2	--
Red Hill Pillow (M)	1/29	--	3.5	29.4	--
Still Creek	1/29	12	1.5	12.8	17.1
Switchback	1/30	11	2.0	11.6	11.5 b
Tilly Jane	1/31	16	3.4	20.4	26.7

LOWERCOLUMBIA WATERSHED

Blazed Alder Pillow (T)	N/R				
Blazed Alder Pillow (S)	N/R				
Blazed Alder Pillow (M)	N/R				
Mt. Hood Test Site (T)	1/30	--	9.9	--	43.3 b
Mt. Hood Test Site (S)	1/30	29	7.5	39.3	37.3 b
Mt. Hood Test Site (M)	N/R			40.9	--
Mud Ridge Pillow (T)	1/29	--	1.6	16.2	--
Mud Ridge Pillow (S)	1/29	16	1.5	16.2	21.8
Mud Ridge Pillow (M)	1/29	--	1.8	14.4	--
North Fork Res. (T)	1/28	--	0.7	9.3	--
North Fork Res. (S)	1/28	6	0.9	--	--
North Fork Res. (M)	1/28	--	0.8	--	--
Still Creek	1/29	12	1.5	12.8	17.1

WILLAMETTE WATERSHEDS

Cascade Summit	1/29	20	3.5	9.2	20.8
Cascade Summit Plw. (T)	1/29	--	6.8	--	--
Cascade Summit Plw. (S)	1/29	31	6.9	12.3	--
Cascade Summit Plw. (M)	1/29	--	6.6	8.6	--
Champion	1/30	18	2.1	5.0	19.8 b
Clackamas Lake		e			
Clackamas Lake Plw. (T)	2/1	--	1.2	--	--
Clackamas Lake Plw. (S)		e			
Clackamas Lake Plw. (M)		e			
Clear Lake	1/29	7	0.6	4.4	7.7
Clear Lake Plw. (T)	N/R				
Clear Lake Plw. (S)	1/29	13	1.8	7.6	--
Clear Lake Plw. (M)	1/29	--	1.8	--	--
Clear Lake Exot.	1/29	12	1.6	7.6	11.7

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. C

WILLAMETTE WATERSHEDS (CONT.)					
Daly Lake Plw. (T)	2/2	--	1.8	--	--
Daly Lake Plw. (S)	2/2	6	1.9	0.1	--
Daly Lake Plw. (M)	2/2	--	1.1	0.0	--
Dead Horse Grade	2/2	4	1.2	2.3	11.8
Golden Curry Creek	1/30	TR	0.1	0.1	4.6b
Hogg Pass	1/28	25	4.8	12.1	28.4
Hogg Pass Pillow (T)	1/28	--	5.9	13.9	--
Hogg Pass Pillow (S)	1/28	29	6.2	14.4	--
Hogg Pass Pillow (M)	1/28	--	6.2	14.6	--
Holland Meadows Plw. (T)	N/R				
Holland Meadows Plw. (S)	2/2	12	3.4	4.9	--
Holland Meadows Plw. (M)	2/2	--	2.3	2.9	--
Jump Off Joe Pillow (T)	1/28	--	0.8	1.1	--
Jump Off Joe Pillow (S)	1/28	4	1.0	2.3	--
Jump Off Joe Pillow (M)	1/28	--	0.6	0.5	--
Layng Creek	1/30	0	0.0	0.1	--
Little Meadows Plw. (T)	2/2	--	3.3	4.2	--
Little Meadows Plw. (S)	2/2	14	3.4	4.8	--
Little Meadows Plw. (M)	2/2	--	2.8	3.6	--
Lost Creek Ranch	2/2	0	0.0	0.1	3.9
Lund Park	1/30	0	0.0	0.1	0.1b
Marion Forks	1/28	TR	0.1	2.9	9.6
Marion Forks Pillow (T)	1/28	--	0.6	--	--
Marion Forks Pillow (S)	1/28	TR	0.1	3.0	--
Marion Forks Pillow (M)	1/28	--	0.2	2.4	--
Marys Peak	2/2	5	1.2	--	6.1b
McCredie Springs	1/29	0	0.0	0.0	0.5
McKenzie	2/2	22	7.3	17.1	31.6
McKenzie Pillow (T)	N/R				
McKenzie Pillow (S)	2/2	22	7.3	15.3	--
McKenzie Pillow (M)	2/2	--	7.8	10.3	--
Mt. Hood Test Site (T)	1/30	--	9.9	--	43.3b
Mt. Hood Test Site (S)	1/30	29	7.5	39.3	37.3b
Mt. Hood Test Site (M)	N/R			40.9	--
Peavine Ridge Pillow (T)	N/R			--	11.7b
Peavine Ridge Pillow (S)	N/R				
Peavine Ridge Pillow (M)	N/R				
Railroad Overpass	1/29	0	0.0	0.0	1.7
Railroad Overpass Plw. (T)	N/R				
Railroad Overpass Plw. (S)	1/29	0	0.0	0.0	--
Railroad Overpass Plw. (M)	1/29	--	0.0	0.0	--
Roaring River Plw. (T)	2/2	--	2.0	--	--
Roaring River Plw. (S)	2/2	11	3.0	8.8	--
Roaring River Plw. (M)	2/2	--	2.6	9.8	--
Saddle Mtn. Pillow (T)	2/1	--	1.5	4.6	--
Salt Creek Falls	1/29	6	0.9	0.8	11.3
Salt Creek Falls Plw. (T)	1/29	--	1.9	--	--
Salt Creek Falls Plw. (S)	1/29	10	1.5	4.8	--
Salt Creek Falls Plw. (M)	1/29	--	1.7	3.0	--
Santiam Junction	1/28	9	1.8	5.0	17.8
Santiam Junction Plw. (T)	1/28	--	2.4	--	--
Santiam Junction Plw. (S)	1/28	9	2.0	6.3	--
Santiam Junction Plw. (M)	1/28	--	1.8	4.1	--
Seine Creek Pillow (T)	2/1	--	0.0	--	--
Still Creek	1/29	12	1.5	12.8	17.1
Summit Lake Pillow (T)	N/R				
Summit Lake Pillow (S)	1/29	36	8.9	18.0	27.9b
Summit Lake Pillow (M)	1/29	--	7.3	16.9	--
Timothy Lake	1/29	7	0.8	6.4	9.6b
Waldo Lake	DISCONTINUED				
Weaver Creek	1/30	0	0.0	0.1	0.6b
White Branch Slide	2/2	0	0.0	0.0	6.3
Whitewater Bridge	1/28	0	0.0	2.1	5.0

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BASIC DATA SUPPLEMENT 1

FEBRUARY 1, 1981

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c
ROGUE, UMPQUA WATERSHEDS					
Althouse	1/30	8	1.3	0.0	6.7
Annie Spring	1/28	43	11.9	14.4	30.2
Beaver Dam Creek	1/31	13	3.0	4.1	10.2
Bigelow Camp Plw.(T)	N/R				
Bigelow Camp Plw.(S)	1/29	14	1.0	--	--
Bigelow Camp Plw.(M)	1/29	--	1.8	--	--
Big Red Mountain	1/26	22	7.1	14.8	19.9
Big Red Mtn. Plw.(T)	1/26	--	5.5	--	--
Big Red Mtn. Plw.(S)	1/26	17	4.5	12.5	--
Big Red Mtn. Plw.(M)	1/26	--	4.0	--	--
Billie Creek Divide	1/27	11	2.6	7.6	15.3
Billie Cr. Div. Plw. (T)	1/27	--	4.4	9.3	--
Billie Cr. Div. Plw. (S)	1/27	16	4.8	8.3	--
Billie Cr. Div. Plw. (M)	1/27	--	3.8	8.6	--
Caliban	1/26	26	8.5	20.8	25.3 ^b
Caliban (Alternate)	1/26	25	8.6	20.4	--
Champion	1/30	18	2.1	5.0	19.8 ^b
Cold Springs Camp	1/28	34	9.8	17.2	24.1
Cold Spgs. Camp Plw. (T)	N/R			--	21.6 ^b
Cold Spgs. Camp Plw. (S)	1/28	19	4.2	10.2	--
Cold Spgs. Camp Plw. (M)	1/28	--	3.3	10.6	--
Deadwood Junction	1/31	12	2.8	2.5	7.2
Diamond-Crater Summit	^e				
Diamond Lake	1/27	6	1.1	6.2	14.3
Diamond Lake Plw. (T)	N/R				
Diamond Lake Plw. (S)	1/27	8	1.5	6.1	--
Diamond Lake Plw. (M)	1/27	--	0.6	5.2	--
Fish Lake	1/27	4	1.2	4.4	10.4 ^b
Fish Lake Pillow (T)	N/R				
Fish Lake Pillow (S)	1/27	4	1.0	5.7	--
Fish Lake Pillow (M)	N/R			1.1	--
Fourmile Lake	1/27	21	6.8	10.4	14.1 ^b
Fourmile Lake Pillow (T)	1/27	--	8.0	--	--
Fourmile Lake Pillow (S)	1/27	28	8.2	14.7	--
Fourmile Lake Pillow (M)	1/27	--	7.9	13.1	--
Grayback Peak	1/28	18	2.9	9.2	17.4
Howard Prairie Reservoir	1/31	13	2.7	3.4	5.8
Hyatt Prairie	1/31	10	2.3	1.6	6.4
Hyatt Prairie Pillow (T)	1/31	--	1.8	--	--
Hyatt Prairie Pillow (S)	1/31	13	2.5	--	--
Hyatt Prairie Pillow (M)	1/31	--	2.1	5.9	--
King Mountain #1	1/27	5	0.8	0.0	5.2 ^b
King Mountain #2	1/27	3	0.6	0.0	3.5 ^b
King Mountain #2 Plw.(T)	N/R				
King Mountain #2 Plw.(S)	1/27	4	0.6	--	--
King Mountain #2 Plw.(M)	1/27	--	0.3	--	--
King Mountain #3	1/27	0	0.0	0.0	1.1 ^b
King Mountain #4	1/27	0	0.0	0.0	0.1 ^b
King Mountain #5	1/27	0	0.0	0.0	--
King Mountain #6	1/27	0	0.0	0.0	--
Little Red Mountain	DISCONTINUED				
Mt. Ashland Switchback	1/25	32	9.8	21.0	24.6 ^b
Mule Creek	1/27	0	0.0	0.0	6.6 ^b
North Umpqua	1/29	6	1.0	3.1	11.6
Page Mountain	1/30	4	0.5	0.0	4.1
Park Headquarters	1/28	60	19.3	26.2	41.1
Red Butte #1	1/30	14	2.2	0.0	8.8 ^b
Red Butte #2	1/30	9	1.6	0.0	6.0
Red Butte #3	1/30	2	0.5	0.0	3.1
Red Butte #4	1/30	0	0.0	0.0	1.6
Red Butte #5	1/30	0	0.0	0.0	0.5
Red Butte #6	1/30	0	0.0	0.0	--
Seven Mile	1/29	35	8.2	14.3	20.9 ^b
Seven Mile Pillow (T)	N/R				
Seven Mile Pillow (S)	1/29	33	7.5	13.0	--
Seven Mile Pillow (M)	1/29	--	5.7	13.4	--
Silver Burn	2/2	9	1.5	3.5	10.4
Siskiyou Summit	1/29	13	1.8	0.0	6.6
Ski Bowl Road	1/25	22	6.6	15.6	20.6 ^b
South Fork Canal	1/29	1	0.1	0.0	3.0 ^b
Trap Creek	1/29	5	1.0	1.7	9.9

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^C
KLAMATH WATERSHEDS					
Annie Spring	1/28	43	11.9	14.4	30.2
Billie Creek Divide	1/27	11	2.6	7.6	15.3
Billie Cr. Div. Plw.(T)	1/27	--	4.4	9.3	--
Billie Cr. Div. Plw.(S)	1/27	16	4.8	8.3	--
Billie Cr. Div. Plw.(M)	1/27	--	3.8	8.6	--
Chemult Alternate	2/2	11	2.1	4.1	9.8
Chemult Alternate Plw.(T)	N/R				
Chemult Alternate Plw.(S)	2/2	10	2.0	4.0	--
Chemult Alternate Plw.(M)	2/2	--	1.5	--	--
Chiloquin (PP&L)	N/R			--	1.9 ^b
Cold Springs Camp	1/28	34	9.8	17.2	24.1
Cold Spgs. Camp Plw.(T)	N/R			--	21.6 ^b
Cold Spgs. Camp Plw.(S)	1/28	19	4.2	10.2	--
Cold Spgs. Camp Plw.(M)	1/28	--	3.3	10.6	--
Crazyman Flat *	2/1	12	1.4	6.7	6.8
Crowder Flat (Calif.) *	2/1	11	1.3	0.0	2.6
Crystal (PP&L)	1/30	8	1.7	0.1	7.1 ^b
Diamond-Crater Summit		^e			
Dog Hollow *	2/1	4	0.4	0.0	1.0
Finley Corrals *	2/1	23	4.6	15.0	11.5
Fort Klamath (PP&L)	1/30	8	1.7	0.0	3.2 ^b
Fourmile Lake	1/27	21	6.8	10.4	14.1 ^b
Fourmile Lake Plw.(T)	1/27	--	8.0	--	--
Fourmile Lake Plw.(S)	1/27	28	8.2	14.7	--
Fourmile Lake Plw.(M)	1/27	--	7.9	13.1	--
Gerber	2/2	4	0.6	0.0	2.4
Harriman (PP&L)	1/30	6	1.4	0.1	4.1 ^b
Howard Prairie	1/31	13	2.7	3.4	5.8
Hyatt Prairie Reservoir	1/31	10	2.3	1.6	6.4
Hyatt Prairie Res.Plw.(T)	1/31	--	1.8	--	--
Hyatt Prairie Res.Plw.(S)	1/31	13	2.5	--	--
Hyatt Prairie Res.Plw.(M)	1/31	--	2.1	5.9	--
Kirk (PP&L)	N/R			--	5.6 ^b
Park Headquarters	1/28	60	19.3	26.2	41.1
Quartz Mountain	1/27	8	1.0	5.8	4.6
Quartz Mtn. Pillow (T)	1/27	--	0.9	--	--
Quartz Mtn. Pillow (S)	1/27	8	1.0	6.0	--
Quartz Mtn. Pillow (M)	1/27	--	0.1	4.4	--
Seven Mile	1/29	35	8.2	14.3	20.9 ^b
Seven Mile Pillow (T)	N/R				
Seven Mile Pillow (S)	1/29	33	7.5	13.0	--
Seven Mile Pillow (M)	1/29	--	5.7	13.4	--
State Line (Calif.) *	2/1	14	1.7	5.0	6.4
Strawberry	1/28	9	1.1	4.0 ^a	5.4 ^b
Strawberry Pillow (T)	1/28	--	0.6	--	--
Strawberry Pillow (S)	1/28	9	0.9	--	--
Strawberry Pillow (M)	1/28	--	0.4	--	--
Summer Rim *	2/1	24	4.8	11.5	11.0 ^b
Summer Rim					
Summer Rim Pillow (T)	2/1	--	6.2	10.4	--
Summer Rim Pillow (S)		^e			
Summer Rim Pillow (M)		^e			
Sycan Flat *	2/1	6	0.6	1.9	5.4
Taylor Butte	1/26	4	0.4	2.2	3.8
Taylor Butte Pillow (T)	N/R			3.9	--
Taylor Butte Pillow (S)	1/26	3	0.4	3.5	--
Taylor Butte Pillow (M)	N/R			1.9	--

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 1

FEBRUARY 1, 1981

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c

LAKE COUNTY, GOOSE LAKE WATERSHEDS					
Adin Mountain (Calif.)	1/22	0	0.0	8.4	8.8
Bald Mountain (Nev.)	2/1	12	1.4	5.0	--
Bear Flat Meadow *	2/1	21	4.2	8.9	6.6
Camas Creek #1	1/27	11	1.8	6.9	7.3
Camas Creek #2	1/27	9	1.3	8.5	--
Cedar Pass (Calif.)	1/26	12	2.6	13.6	11.1
Colvin Creek *	2/1	25	5.0	4.2	3.3 ^b
Cox Flat *	2/1	21	4.2	2.0	4.8
Crowder Flat (Calif.) *	2/1	11	1.3	0.0	2.6
Dismal Swamp (Calif.) *	2/1	48	10.6	21.1	--
Dismal Swamp #2 Plw.(T)	N/R	e			
Dismal Swamp #2 Plw.(S)		e			
Dismal Swamp #2 Plw.(M)		e			
Finley Corrals *	2/1	23	4.6	15.0	11.5
Hart Mountain *	2/1	11	1.3	1.2	0.9
Little Bally Mtn. (Nev.)	2/1	12	1.4	4.0	2.2
Mt. Bidwell (Calif.)		e			
North Star (Calif.)		e			
Patton Meadows *	2/1	23	4.6	12.5	11.3
Quartz Mountain	1/27	8	1.0	5.8	4.6
Quartz Mountain Plw.(T)	1/27	--	0.9	--	--
Quartz Mountain Plw.(S)	1/27	8	1.0	6.0	--
Quartz Mountain Plw.(M)	1/27	--	0.1	4.4	--
Rogger Meadows *	2/1	24	4.8	10.8	--
Sherman Valley *	2/1	24	4.8	12.0	7.3
Silver Creek	1/24	4	0.7	0.1	2.1
Silver Creek Plw.(T)	1/27	--	4.3	--	--
Silver Creek Plw.(S)	1/27	18	4.0	6.2	--
Silver Creek Plw.(M)	1/27	--	4.2	2.5	--
State Line (Calif.) *	2/1	14	1.7	5.0	6.4
Strawberry	1/28	9	1.1	4.0 ^a	5.4 ^b
Strawberry Plw.(T)	1/28	--	0.6	--	--
Strawberry Plw.(S)	1/28	9	0.9	--	--
Strawberry Plw.(M)	1/28	--	0.4	--	--
Summer Rim *	2/1	24	4.8	11.5	11.0 ^b
Summer Rim		e			
Summer Rim Plw.(T)	2/1	--	6.2	10.4	--
Summer Rim Plw.(S)		e			
Summer Rim Plw.(M)		e			
Sycan Flat *	2/1	6	0.6	1.9	5.4

SNOW

DRAINAGE BASIN and/or SNOW COURSE	THIS YEAR			PAST RECORD	
	Date of Survey	Snow Depth (In.)	Water Cont. (In.)	Water Content (Inches)	
				Last Yr.	Ave. ^c

HARNEY BASIN WATERSHEDS					
Blue Mountain Springs	1/29	26	7.8	10.6	12.1
Blue Mtn. Spgs. Plw.(T)	1/29	--	6.2	10.1	--
Blue Mtn. Spgs. Plw.(S)	1/29	28	7.0	10.0	11.8 ^b
Blue Mtn. Spgs. Plw.(M)	1/29	--	3.9	9.7	9.0 ^b
Buck Pasture *	2/2	4	0.8	0.0	1.4
Buckskin Lake *	2/2	0	0.0	0.0	0.7 ^b
Call Meadows *	2/2	9	1.8	1.0	2.5 ^b
Delintment Lake		e			
Denio Creek *	2/2	14	2.8	0.0	0.5
Disaster Peak (Nev.)	2/3	15	3.0	--	--
Emigrant Butte	1/29	9	1.0	0.0	2.9
Fish Creek *	2/2	38	9.6	18.9	16.3 ^b
Fish Creek	1/30	42	10.6	--	--
Fish Creek Plw. (T)	N/R			20.0	--
Fish Creek Plw. (S)	1/30	46	12.0	--	--
Fish Creek Plw. (M)	1/30	--	9.1	--	--
Gov't. Corrals	1/29	28	6.0	--	--
Hart Mountain *	2/1	11	1.3	1.2	0.9
Idlewild Camp Alt.	1/29	8	1.0	0.0	4.2 ^b
Izee Summit	1/28	11	1.8	4.6	5.7
Lake Creek R.S.	1/29	20	4.8	6.4	7.6
Lake Creek R.S. Plw.(T)	1/29	--	4.7	--	--
Lake Creek R.S. Plw.(S)	1/29	22	4.8	7.0	--
Lake Creek R.S. Plw.(M)	1/29	--	4.1	6.5	--
Oregon Canyon *	N/R			5.6	3.7
Rock Springs	1/28	9	2.4	3.8	4.4
Rock Springs Plw.(T)	N/R				
Rock Springs Plw.(S)	1/28	11	2.2	3.0	--
Rock Springs Plw.(M)	1/28	--	1.0	1.1	--
Silvies *	N/R			--	5.8 ^b
Silvies	1/30	20	4.9	--	--
Silvies Plw.(T)	2/1	--	4.5	10.7	--
Silvies Plw.(S)	N/R				
Silvies Plw.(M)	1/30	--	4.3	--	--
Snow Mountain	2/2	25	5.3	8.7	9.5 ^b
Snow Mountain Plw.(T)	2/2	--	2.6	6.0	--
Snow Mountain Plw.(S)	2/2	19	3.7	5.5	8.6 ^b
Snow Mountain Plw.(M)	N/R			4.6	--
Starr Ridge	1/28	5	1.4	2.8	4.6
Starr Ridge Pillow (T)	2/1	--	1.5	--	--
Starr Ridge Pillow (S)	1/28	7	1.2	4.0	--
Starr Ridge Pillow (M)	1/28	--	1.4	3.7	--
Stinking Water	2/2	6	3.2	3.7	2.1
Trout Creek *	2/2	20	4.2	7.8	4.5
"V" Lake *	2/2	27	6.8	8.4	4.0

* Aerial
N/R No Report
TR Trace
T = Telemetry Measurement
S = Snow Tube Measurement
M = Manometer Measurement

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 2

FEBRUARY 1, 1981

PRECIPITATION (Inches)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION		PAST RECORD	
		Date of Reading	Precipitation	Last Year	Average ^c
Arbuckle Mountain (Morrow County)	5400	From 12/29 To 1/29	2.50"		
Beaver Reservoir (Union County)	5150	From 8/19 To 1/28	8.28"		
Bigelow Camp (Josephine County)	5120	From 7/24 To 1/29	25.56"		
Big Red Mountain (Jackson County)	6250	From 7/23 To 1/26	20.88"		
Billie Creek Divide (Jackson County)	5310	From 1/5 To 1/27	2.16"		
Blue Mountain Springs (Grant County)	5900	From 12/31 To 1/29	1.44"		
Bourne (Baker County)	5800	From 8/6 To 1/30	13.32"		
Bowman Springs (Union County)	4580	From 7/23 To 1/29	10.50"		
Cascade Summit (Lane County)	4880	From 12/30 To 1/29	2.64"		
Chemult (Klamath County)	4760	From 1/5 To 2/2	2.16"		
Clear Lake (Wasco County)	3500	From 12/29 To 1/29	1.68"		
Cold Springs (Klamath County)	6100	From 11/5 To 1/28	15.84"		
County Line (Umatilla County)	4800	From 12/29 To 1/29	0.60"		
Daly Lake (Linn County)	3600	From 12/28 To 2/2	4.08"		
Derr (Wheeler County)	5670	From 10/30 To 1/30	9.96"		
Diamond Lake (Douglas County)	4600	From 12/29 To 1/27	0.73"		
Emigrant Springs (Umatilla County)	3925	From 12/29 To 1/29	1.44"		
Fish Creek (Harney County)	7900	From 10/22 To 1/30	11.28"		
Fish Lake (Jackson County)	4665	From 1/5 To 1/27	1.44"		
Fourmile Lake (Klamath County)	6000	From 9/23 To 1/27	17.88"		
Gold Center (Grant County)	5340	From 12/30 To 1/30	1.56"		
Greenpoint (Hood River County)	3200	From 10/15 To 1/29	41.04"		

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

BASIC DATA SUPPLEMENT 2

FEBRUARY 1, 1981

PRECIPITATION (Inches)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION		PAST RECORD	
		Date of Reading	Precipitation	Last Year	Average ^c
High Ridge (Umatilla County)	4150	From 12/31 To 1/28	3.24"		
Hogg Pass (Jefferson County)	4755	From 12/31 To 1/28	2.84"		
Holland Meadows (Lane County)	4900	From 12/29 To 2/2	4.44"		
Hyatt Prairie (Jackson County)	4900	From 1/2 To 1/31	2.64"		
Irish-Taylor (Deschutes County)	5500	From 10/24 To 1/30	27.12"		
Jump Off Joe (Linn County)	3400	From 12/31 To 1/28	2.76"		
King Mountain #2 (Douglas County)	4500	From 12/29 To 1/27	2.52"		
Lake Creek (Grant County)	5120	From 12/31 To 1/29	1.56"		
Lucky Strike (Umatilla County)	5050	From 12/29 To 1/29	1.88"		
Madison Butte (Morrow County)	5250	From 12/29 To 1/29	0.96"		
Marion Forks (Linn County)	2730	From 12/31 To 1/28	2.40"		
Marks Creek (Crook County)	4540	From 12/29 To 1/30	0.50"		
McKenzie (Lane County)	5000	From 12/29 To 2/2	3.60"		
Moss Springs (Union County)	5850	From 7/30 To 2/1	18.36"		
Mt. Howard (Wallowa County)	7910	From 8/20 To 2/1	21.36"		
Mud Ridge (Clackamas County)	4050	From 12/30 To 1/29	2.64"		
New Crescent Lake (Klamath County)	4800	From 8/27 To 1/29	16.32"		
North Fork Reservoir (Multnomah County)	3120	From 1/6 To 1/28	4.75"		
Ochoco Meadows (Crook County)	5200	From 10/31 To 1/30	10.32"		
Quartz Mountain (Lake County)	6300	From 12/30 To 1/27	1.56"		
Railroad Overpass (Lane County)	2750	From 12/30 To 1/29	1.20"		
Red Hill (Hood River County)	4400	From 9/9 To 1/29	36.72"		
Roaring River (Lane County)	4900	From 12/29 To 2/2	2.88"		

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.

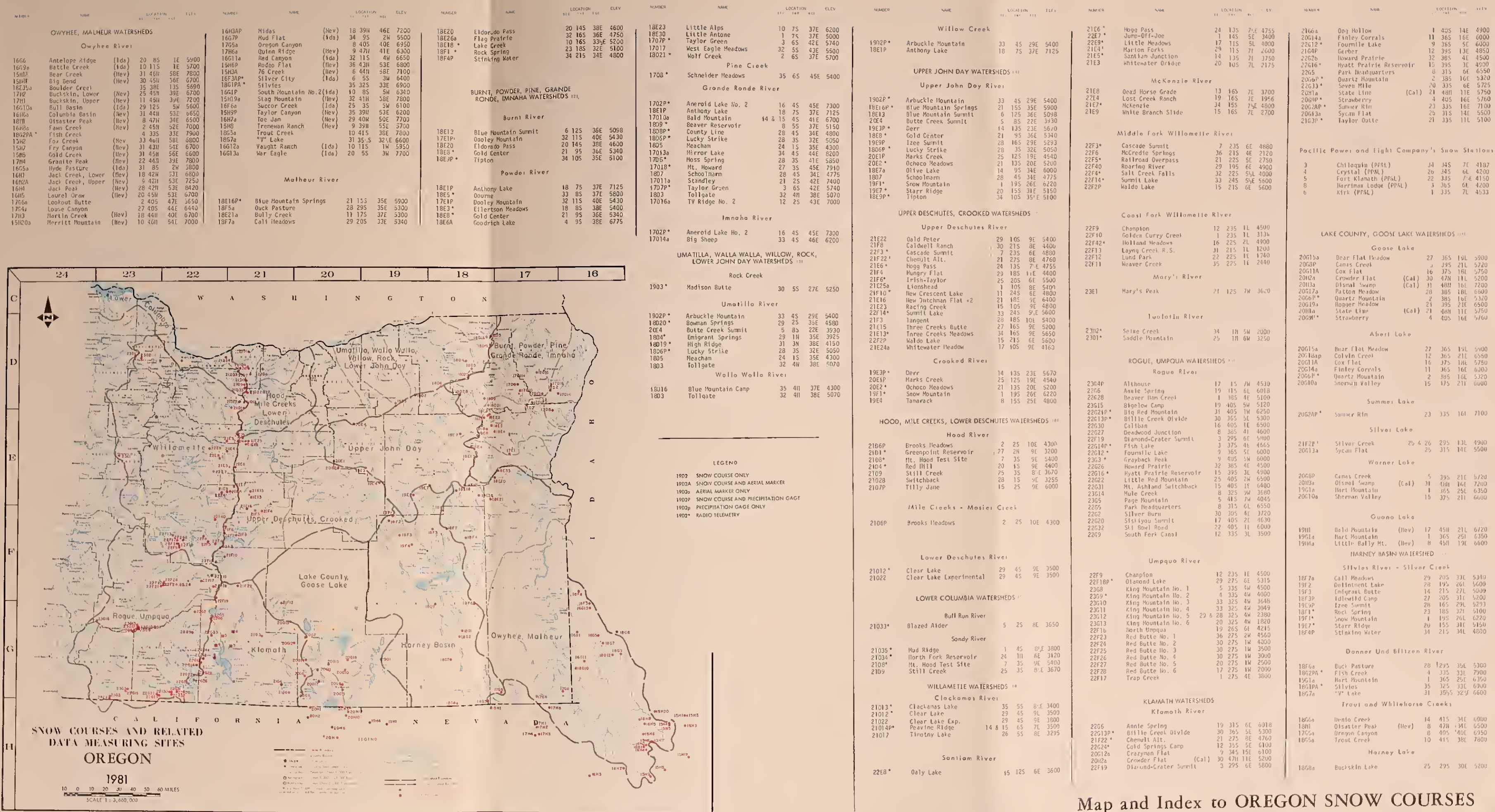
BASIC DATA SUPPLEMENT 2

FEBRUARY 1, 1981

PRECIPITATION (Inches)

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION		PAST RECORD	
		Date of Reading	Precipitation	Last Year	Average ^c
Rock Springs (Grant County)	5100	From 12/30 To 1/28	1.08"		
Salt Creek Falls (Lane County)	4000	From 12/30 To 1/29	2.52"		
Santiam Junction (Lane County)	3750	From 12/31 To 1/28	2.16"		
Schneider Meadows (Baker County)	5400	From 10/7 To 2/1	16.56"		
Seven Mile (Klamath County)	5725	From 8/26 To 1/29	25.56"		
Silver Creek (Lake County)	5720	From 7/22 To 1/27	10.56"		
Silvies (Harney County)	6900	From 10/22 To 1/30	3.60"		
Starr Ridge (Grant County)	5156	From 12/30 To 1/28	0.84"		
Strawberry (Lake County)	5760	From 10/23 To 1/28	3.95"		
Summit Lake (Klamath County)	5600	From 8/13 To 1/29	33.84"		
Taylor Butte (Klamath County)	5040	From 12/29 To 1/26	2.88"		
Taylor Green (Baker County)	5740	From 8/21 To 2/1	16.20"		
Three Creek Meadows (Deschutes County)	5650	From 8/13 To 1/28	24.96"		
Tipton (Baker County)	5100	From 6/24 To 1/30	8.76"		
Wolf Creek (Union County)	5700	From 7/24 To 1/30	11.40"		

(a) Estimated. (b) 1963-77 adjusted average. (c) 1963-77, 15 year average. (d) Corrected to natural flow. (e) Not scheduled.



Map and Index to OREGON SNOW COURSES

The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon Department of Water Resources
Soil and Water Conservation District of Oregon

COUNTY

Douglas County Water Resources Survey

FEDERAL

Department of Agriculture
Cooperative Extension Service
Forest Service
Soil Conservation Service
Department of Army
Corps of Engineers
Department of Commerce
NOAA, National Weather Service
Department of Energy
Bonneville Power Administration
Department of the Interior
Bureau of Land Management
Fish and Wildlife Service
Geological Survey
Water and Power Resources Service

PUBLIC UTILITIES

Pacific Power and Light Company
Portland General Electric Company
California-Pacific National

MUNICIPALITIES

City of Baker
City of La Grande
City of Portland
City of The Dalles
City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District
Associated Ditch Companies
Burnt River Irrigation District
Central Oregon Irrigation District
East Fork Irrigation District
Grants Pass Irrigation District
Hood River Irrigation District
Jordan Valley Irrigation District
Juniper Flat Irrigation District
Lakeview Water Users, Incorporated
Medford Irrigation District
Middle Fork Irrigation District
North Board of Control - Owyhee Project
Ochoco Irrigation District
Rogue River Valley Irrigation District
South Board of Control - Owyhee Project
Squaw Creek Irrigation District
Talent Irrigation District
Tumalo Project
Vale - Oregon Irrigation District
Warmsprings Irrigation District

PRIVATE ORGANIZATIONS

The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
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